Information Mastery and EBM

MS III Medicine Clerkship
RAHC

Goal of today's class:

Introduce you to computer-based resources that will help reduce the

Work

needed to find information based upon Valid and Reliable Evidence.

$$\frac{\text{Relevance x Validity}}{\text{Work}}$$

Assignment

- Search
  http://www.library.uthscsa.edu/rahc/EBM/assignment.htm
  - Send topic to Dr. Hanley if you don't pick one from the list
- Oral presentation
  http://www.library.uthscsa.edu/rahc/EBM/presentation.htm

Why not Google?

- Imprecise searches
- Results listings influenced by links to that article
- Most professional journal articles not available full-text on the web for free
- You will held for a higher level of accountability than previous physicians
- Isn't patient health worth a better search?

Seven Alternatives to EBM

Isaacs D, Fitzgerald D. BMJ 1999 Dec 18; 319: 1618

- Eminence based medicine
- Vehemence based medicine
- Eloquence based medicine
- Providence based medicine
- Diffidence based medicine
- Nervousness based medicine
- Confidence based medicine

How do you apply EBM?

- You look for the best available evidence
- You give more weight to the best designed studies
- You value patient outcomes over disease outcomes
- When evidence is limited, you use your clinical experience and the opinions of experts

Steps in EBM

- *Step 1*: Formulate an answerable question
- *Step 2*: Track down the best evidence with which to answer that question
- *Step 3*: Critically appraising the evidence (i.e., find out how good it is).

Steps in EBM

- *Step 4*: Apply the evidence (integrate the results with clinical expertise and patient values)
- *Step 5*: Evaluate your effectiveness and efficiency in executing steps 1–4 and seek ways to improve them both for next time

EBM Process: Step 1

How do you formulate an answerable clinical question?

PICO

- **P**atient, problem, population
- **I**ntervention – what you are going to do to the patient
- **C**omparison – usual/standard intervention, or doing nothing.
- **O**utcome

Your case:

P

In …

I

would …

C

compared to …

O

result in … ?

Sample patient

Your patient is a 72-year-old woman with osteoarthritis of the knees and moderate hypertension, accompanied by her daughter, a lab tech from the hospital. The daughter wants you to give her mother a prescription for one of the new COX-2 inhibitors. She has heard that they cause less GI bleeding.

EBM Process: Step 2

How to Find the Current Best Evidence

Sources of Information

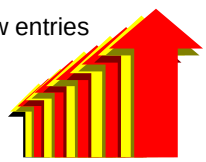
- Patients
- Colleagues
- Texts
- Journals
- Electronic Resources
- Practice guidelines
- Internet
- Systematic texts
- Drug Reps
- Media – videos, models

All evidence is not equal

- Only a small portion of medical literature is useful in answering clinical questions.
- High levels of evidence may not exist for all clinical questions because of the nature of medical problems and research and ethical limitations.

Medline

- Indexes almost 5000 different journals
- Contains over 15 million references
- Adds over 400,000 new entries yearly



Other EBM Resources in OVID

- Cochrane Databases of Systematic Reviews
- DARE
- Controlled Trials Register
- ACP Journal Club

- Search All EBM Reviews

Reducing work

Let someone else do the heavy lifting!

- searching the literature
- regularly reviewing journals
- critical appraisal
- summarizing evidence

There are many sources of EBM where someone else did the work for you

EBM Clinical Systems

Structured, evidence-based information pertaining to specific clinical questions.

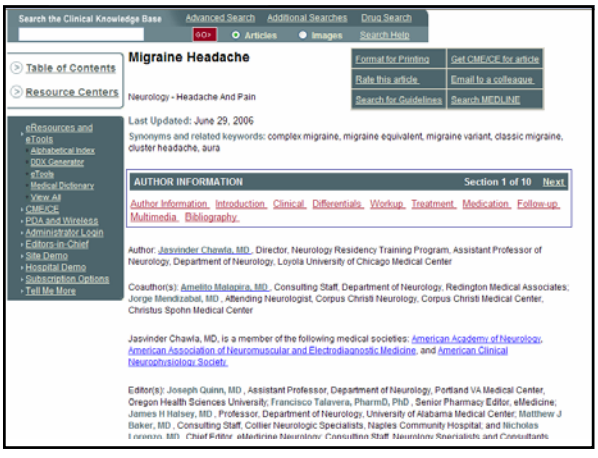
Use these databases for quick answers to clinical questions

- DynaMed
- InfoRetriever
- PIER – Physicians Information and Education Resource

Systematic Textbook

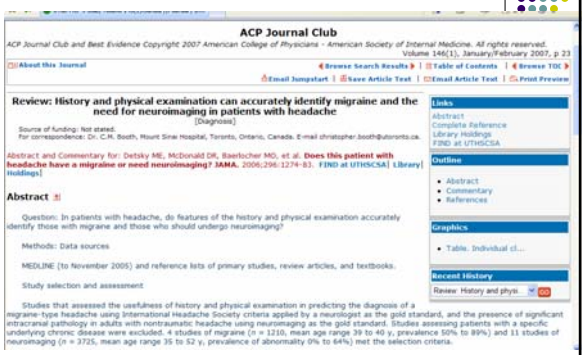
The equivalent of clinical textbook

- eMedicine
- Up-to-Date



Synopses and Structured Abstracts

- Evidence-based journal abstracts
- Synoptic journals include
  - *ACP Journal Club*,
  - *Evidence Based Medicine,* and
  - a number of others.



Systematic Reviews

Summaries based on:

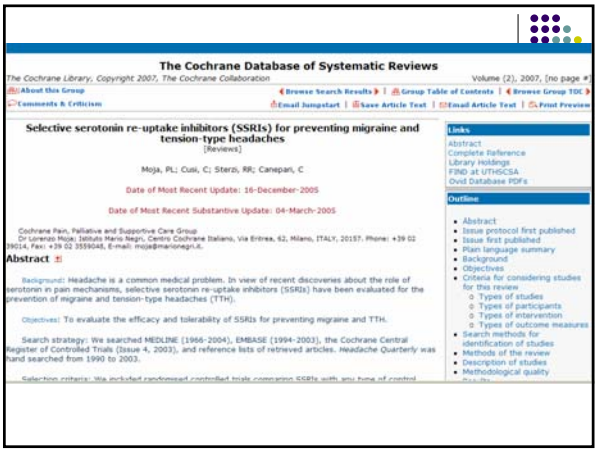
- exhaustive searches for evidence;
- explicit scientific reviews of the studies uncovered in the search; and
- systematic assembly of the evidence

in order to provide as clear a signal about the effects of a health care intervention as the accumulated evidence will allow.

Evidence-Based Medicine. Straus 2005

Cochrane Collaboration

- What is it?
  - "Systematic, up-to-date reviews of all relevant RCTs of health care"
    - Usually treatment – not very many screening and diagnosis topics
- Cochrane Principles
  - Minimizing bias
  - Ensuring quality
  - Keeping up to date
- The "Cochrane Library" has three parts:
  - Cochrane Database of Systematic Reviews
  - Controlled Trials register
  - Database of Abstracts of reviews of Effectiveness (DARE)


The Cochrane Database of Systematic Reviews

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Selective serotonin re-uptake inhibitors (SSRIs) for preventing migraine and tension-type headaches

[Reviews]

Moja, PL; Cusi, C; Sterzi, RR; Canepari, C

Date of Most Recent Update: 16-December-2005

Date of Most Recent Substantive Update: 04-March-2005

Cochrane Pain, Palliative and Supportive Care Group
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Abstract

Background: Headache is a common medical problem. In view of recent discoveries about the role of serotonin in pain mechanisms, selective serotonin re-uptake inhibitors (SSRIs) have been evaluated for the prevention of migraine and tension-type headaches (TTH).

Objectives: To evaluate the efficacy and tolerability of SSRIs for preventing migraine and TTH.

Search strategy: We searched MEDLINE (1966-2004), EMBASE (1994-2003), the Cochrane Central Register of Controlled Trials (Issue 4, 2003), and reference lists of retrieved articles. Headache Quarterly was hand searched from 1990 to 2003.

Selection criteria: We included randomised controlled trials comparing SSRIs with any type of control

Links

Abstract
Complete Reference
Library Holdings
FIND at UTHSCSA
Ovid Database PDFs

Outline

- Abstract
- Issue protocol first published
- Issue first published
- Plain language summary
- Background
- Objectives
- Criteria for considering studies for this review
  - Types of studies
  - Types of participants
  - Types of intervention
  - Types of outcome measures
- Search methods for identification of studies
- Methods of the review
- Description of studies
- Methodological quality

Practice Guidelines

Clinical practice guidelines are (usually) systematically developed statements to help clinicians and patients with decisions about appropriate health care for specific clinical circumstances.

Clinical Practice Guidelines

- Institute for Clinical Systems
  - http://www.icsi.org/knowledge/
- National Guidelines Clearinghouse
  - http://www.guidelines.gov/
- U.S. Preventive Services Task Force
  - http://www.ahrq.gov/browse/

EBM Process: Step 2

How to Find Current Best Evidence: Creating a Search Strategy

Determine your best method

- Find a way to search, then do it!
- Starting with a systematic text is not a bad thing, but remember that it may not answer all questions.
- Don't ignore original research

Our searching topic

Why is screening mammography controversial for women in their 40's? Is there a reduction in breast cancer mortality? Is there potential harm?

Select your terms

- Based on your terms:
  - P
  - I
  - C
  - O

Hints for good search strategies

- Use one term at a time
- Use text words and subject heading appropriately
- Use "explode" function
- Connect with Boolean operators as separate step
- Use subheadings rarely

Let’s do some searching!